

ABSTRACT OF THE DISCLOSURE

An X-ray projection exposure apparatus includes a mask  
chuck, a wafer chuck, an X-ray illuminating system, and an  
5 X-ray projection system. The mask chuck holds a reflection  
X-ray mask having a mask pattern thereon. The wafer chuck  
holds a wafer onto which the mask pattern is transferred.  
The X-ray illuminating system illuminates the reflection X-  
ray mask, held by the mask chuck, with X-rays. The X-ray  
10 projection optical system projects the mask pattern of the  
reflection X-ray mask onto the wafer held by the wafer chuck  
with a predetermined magnification. The mask chuck includes  
a mechanism for generating static electricity for attracting  
and holding the reflection X-ray mask by an electrostatic  
15 force. The invention also includes a device manufacturing  
method using such an X-ray projection exposure apparatus to  
transfer a mask pattern onto the wafer using the X-ray  
projection exposure apparatus.

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